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Special points of interest:

- INBRE Meeting Wrap Up
- Fritsch Receives Grant and Award
- Koeppe Receives Award
- Adams Receives Grant
- Students Defend
- Homecoming

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2016 Arkansas INBRE Conference

The 2016 Arkansas INBRE Research Conference was hosted October 21-22 by the Departments of Chemistry and Biochemistry, Physics and Biological Sciences, with venues at the Chancellor Hotel, the Fayetteville Town Center and the University of Arkansas campus. Dr. Steven Harms, M.D., clinical professor at the University of Arkansas for Medical Sciences and radiologist at the Breast Center of Northwest Arkansas, delivered the keynote address on magnetic resonance imaging and medical diagnosis.

Invited faculty speakers included Dr. Mellissa Kelley, Professor of Chemistry at the University of Central Arkansas, Dr. Brett Lehmer, Assistant Professor of Physics at the University of Arkansas, and Dr. Tsunemi Yamashita, Professor of Biology at Arkansas Tech University. Invited undergraduate student speakers competed for awards. The full conference program is available at <https://inbre.uark.edu/>.



Congratulations to the undergraduate student award winners who are listed below:

Biological Sciences

Poster Competition

1st Place - John Short, Missouri State University

2nd Place - Christa Huber, Hendrix College

Honorable Mention: Dustin Brown (UALR), Julius B. Danquah (Philander Smith College), Alyssa Hoover (Harding University), Yuliya Kunz (Northeastern State University), Angeline Rodriguez (Missouri State University), Donnell White (UA Monticello), Taylor Winn (UA Monticello)

Oral Competition

1st Place - Gina Hauptman, UA Fayetteville

2nd Place - Brianna LaFerney, Harding University

Chemistry and Biochemistry

Poster Competition

1st Place - Samantha Jelinek, Rhodes College

2nd Place - Mercedes Winfrey, UA Pine Bluff

Honorable Mention: Alex Graves (Rhodes College), Jasmine Johnson (UA Pine Bluff), Madison Lee (University of Central Arkansas), **Karli Lipinski** (UA Fayetteville)

Oral Competition

1st Place - Tia'Asia James, UA Pine Bluff

2nd Place - Amanda Paz Herrera, University of the Ozarks

Honorable Mention - Madison Perchik (Rhodes College)

Physics

Poster Competition

1st Place - Christopher Oldfield, UA Fayetteville

2nd Place - Matthew Huber, Rhodes College

Honorable Mention - Chidubem Egbosimba (UA Fayetteville) and Hayley Heacox (UCA)

Oral Competition

1st Place - Jesse Underwood, Missouri State University

2nd Place - Joseph Matson, Hendrix College

Honorable Mention - Luke Fairbanks (Rhodes College)

(cont. on page 5)

Faculty News

On the Go

Jie Xiao delivered an invited departmental seminar at the department of Materials Science and Engineering at University of Washington October 31, 2016. She discussed the interfaces challenges in battery research with the faculty members and students there.

Feng Wang gave an invited talk at the ACS meeting, "MP2 hydration free energy of simple salts predicted through adaptive force matching." ACS National Meeting, Philadelphia, PA, 10/21-25/2016.

Wei Shi gave several invited lectures during October and November. "Chemistry and Biology of Ipomoeassin Natural Products," Virginia Tech University, Blacksburg, VA, November 11, 2016 and at the Midwest Carbohydrate and Glycobiology Symposium, Mount Pleasant, MI, Oct. 14-15, 2016. "From Organic Chemistry to Biology" was delivered four different places. University of Toledo, Toledo, OH Oct. 21, 2016; Michigan State University, East Lansing, MI Oct. 19, 2016; Wayne State University, Detroit, MI Oct. 18, 2016; and Central Michigan University, Mount Pleasant, MI, 10/17/16.

Matt McIntosh gave an invited talk, "Radical Chemistry of the Breslow Intermediate" at the Frontiers of Organic Synthesis symposium at the Southwest Regional Meeting in Galveston, TX on November 12. The talk was based on the work of two recent Ph.D. graduates, **Kola Ayinuola**, currently at Sealed Air Corp, and **Sefat Alwarsh**, currently an instructor in our department.

Nan Zheng gave a talk at ICIQ (<http://www.iciq.org>), Tarragona, Spain October 14. "Development of Annulation Reactions of Cyclopropylanilines and Cyclobutylanilines by Visible Light Photocatalysis."

T.K.S. Kumar has been invited to present a Plenary Lecture and be a lead Panelist, "New Methods in the Overexpression and Purification of Recombinant Proteins" at the 16th Annual PEP TALK - Protein Science R & D to Therapeutics, January 9-13, 2017 in San Diego, CA.

Christian J. Goodnow and **Stefan M. Kilyanek**. "Electrochemical Reduction of Group VI Metal-Dioxo Complex-

es." Poster presented at 51st ACS Mid-West Regional Meeting October 26-28, 2016 in Manhattan, KS. (pic. on p. 7)

Stefan M. Kilyanek gave a talk, "Deoxydehydration of Diols by d^0 early-metal-oxo complexes." 51st ACS Mid-West Regional Meeting October 26-28, 2016, Manhattan, KS.

Stefan M. Kilyanek gave an invited talk, "The Conversion of Polyols to Plastic Precursors: Deoxydehydration as a Route to a Green Chemical Economy" at The University of Memphis, November 11, 2016.

Mahsa Lotfi-Marchoubeh, Mengjia Hu, Miguel Abrego, I. Fritsch, "Spatiotemporally-Distributed Electrochemical Signals at Microelectrode Arrays to Differentially Detect Catecholamines," Invited Talk in the symposium on *Novel Electrode Materials & Architectures for Energy & Sensing Applications*. 51st Midwest Regional Meeting of the American Chemical Society, Manhattan, KS, Oct. 26-28, 2016.

Jonathan C. Moldenhauer, Madeline Meier, David Paul, "Rapid Determination of Diffusion Coefficients using Electrochemical Time of Flight," Poster presented at 51st Midwest Regional Meeting of the American Chemical Society, Manhattan, KS, Oct. 26-28, 2016. (pic. on p. 7)

Publications

Ashley N. Martfeld, Denise V. Greathouse, and Roger E. Koeppe (2016) Ionization Properties of Histidine Residues in the Lipid-Bilayer Membrane Environment. *J. Biol. Chem.* 291, 19146-19156. <http://dx.doi.org/10.1074/jbc.M116.738583>.

Drew Marquardt, Fred A. Heberle, **Denise Greathouse, Roger Koeppe II**, R.F. Standaert, B. van Oosten, T.A. Harroun, J. Kinnun, J. Williams, Steve Wassall, and J. Katsaras (2016) Lipid Bilayer Thickness Determines Cholesterol's Location in Model Membranes. *Soft Matter* 2016, in press. <http://dx.doi.org/10.1039/c6sm01777k>.

T. Ryan Rogers, Kai-Yang

Leong and Feng Wang (2016) Possible Evidence for a New Form of Liquid Buried in the Surface Tension of Supercooled Water. *Scientific Reports* 6, 33284.

Jicun Li and Feng Wang (2016) The Effect of Core Correlation on the MP2 Hydration Free Energies of Li^+ , Na^+ , and K^+ . *J. Phys. Chem. B*, 120, 9088.

Jicun Li and Feng Wang (2016) Replacing Water Models without Influencing Solute Properties by Decoupling Water-water and Water-solute Interactions. *J. Chem. Phys.* 145, 044501.

Jordana K. Thibado, Ashley N. Martfeld, Denise V. Greathouse, and Roger E. Koeppe II. Influence of High pH and Cholesterol on Single Arginine-Containing Transmembrane Peptide Helices. *Biochemistry* 2016, 55(45), pp. 6337-6343. This article was featured on Newsweek <http://bit.ly/2fbpCZx> Jordana is now pursuing a doctoral degree in physiology, biophysics and systems biology at Weill Medical College, Cornell University's medical campus in NY City.

A. Fakharzadeh and **M. Moradi**, Effective Riemannian Diffusion Model for Conformational Dynamics of Biomolecular Systems. *J. Phys. Chem. Lett.* (2016, accepted).

S.V. Chintapalli, **S. Jayanthi**, P.J. Laaipeddi, **R.K. Gundampati, T.K.S. Kumar**, D.B. van Rossu, A. Anishkin, and S.H. Adams (2016) Novel molecular interactions of acylcarnitines and fatty acids with myoglobin. *J. Biol. Chem.*, pii: jbc.M116.754978 (Epub ahead of Print).

Prudovsky, I, and **T.K.S. Kumar** (2016) S100A13 - Structure and function. *Encyclopedia of Signaling Molecules* (Ed. S. Donato) (in press).



From the Chair ~ *Wesley Stites*

Elsewhere in the Mole we report the results of our second departmental "Three Minute Thesis" competition. This is, obviously, a fairly new thing. The basic idea is that a grad student has three minutes to explain to the proverbial educated layperson what their research topic is and why it is important. When the University started this last year, I thought it was a great idea for multiple reasons. As scientists it is vital that we be able to explain to the public in general and taxpayers in particular why what we do is important enough to spend lots of money on. Public speaking skills go a long way toward helping students build successful careers after they leave here. Taking place in the autumn, this contest offers another venue and a different perspective for incoming grad students who are trying to settle on a research project to hear about the work going on in the department. But, life for grad students is busy. There are classes to take and teach, research to be done, and jobs to be sought. How to convince them to take this seriously? The answer, of course, is money.



We offered cash prizes to the students. We had enthusiastic participation. However, the prizes aren't in the budget. The only way we were able to do this was through the generosity of our alumni and friends. So, if you have given an unrestricted gift to the department in the past year and wonder what happens to your gift, part of the answer was your gift helped to make this competition possible. So, when in a future issue of the Mole you read about a former grad student advancing through the ranks at a company, governmental agency, or university, you should remember that you helped make that possible by honing their ability to tell people about how exciting and important their work is.

Thank you,
Wesley Stites



*Fall finally arrives in the
Chemistry Building*

Alumni Updates

A group of graduate students who are seeking careers in the pharmaceutical industry had an opportunity to meet and have lunch with Dr. Brad Jordan. Dr. Brad Jordan earned his Ph.D. in Dr. Jim Hinton's lab in 2003. He has since been with Amgen and is moving up through the ranks. He is currently a Director of Biosimilar Policy, Global Regulatory Affairs and Safety. Amgen is the biggest independent biotech firm in the world, with annual revenue of over \$20 billion and over 18,000 employees. The department wishes to express our sincere gratitude for his generous assistance and advice given to our graduate students. <https://www.linkedin.com/in/brad-jordan-17b53a5>



Accompanying Dr. Jordan to lunch were (l-r) Abdullah Qassab, Matt Moudy, (Dr. Jordan), Perry Caviness, Christopher Ruth, and Dr. Joshua Sakon

Women's Giving Circle Announces 2016 Grant Recipients, New Scholarship

NewsWire October 10, 2016

Article by Jennifer Holland, director of development communications
University Relations



Photo by Whit Pruitt

Associate Director of Development Charles Gaines and Professor Ingrid Fritsch (center) from the J. William Fulbright College of Arts and Sciences accept a check from Women's Giving Circle President Melissa McIlroy Hawkins (left) and Chancellor Joe Steinmetz (right). Fritsch's proposal received \$25,000 at the circle's 14th annual grant awards ceremony.

The Women's Giving Circle hosted its annual fall voting event on Friday, Oct. 7, and awarded \$90,000 to seven University of Arkansas programs and a newly created scholarship in honor of the circle's founding members.

The Women's Giving Circle Endowed Founders Scholarship was established with \$25,000 from the circle and a \$25,000 match from the chancellor's office. An additional \$2,500 is being made available for immediate distribution in the spring 2017 semester. First-generation students with financial need will be given preference to receive the scholarship.

"The Women's Giving Circle is an important group to our campus, and my wife Sandy and I are very pleased to be involved with their efforts

this year," said Chancellor Joe Steinmetz. "Their grants to students, faculty research and innovative programs are admirable and truly demonstrate their awareness of our campus's evolving needs. This scholarship is an excellent example of their foresight to address another area of need, which I am happy to support."

The Women's Giving Circle is made up of U of A alumni, faculty, staff and friends of the university and was created to encourage women as philanthropic leaders. The circle raises funds in part by requiring annual cash gifts from its members. The annual membership is \$1,000 for alumnae or friends and \$500 for recent graduates, students, faculty and staff.

This year's grant recipients were chosen from 49 proposals, with nine finalists selected through an online vote. Women's Giving Circle members heard presentations from the finalists as part of Friday's voting event and then chose the winning programs. The amounts of the seven grants given out this year ranged from \$3,000 to \$25,000.

Among the seven proposals receiving funding was one presented by Ingrid Fritsch:

"Micro" – Probing the Chemistry of Depression, Drug Addiction and Other Diseases of the Brain, a research initiative presented by Ingrid Fritsch from the J. William Fulbright College of Arts and Sciences. Fritsch seeks to build and evaluate a new type of microprobe that downsizes recent successes in neurotransmitter detection. The \$25,000 of funding will help the research become eligible for a major federal research grant and allow researchers the opportunity to understand diseases that include depression, drug addiction, schizophrenia, Alzheimer's and Parkinson's.

Steinmetz, along with Melissa McIlroy Hawkins, newly sworn-in president of the Women's Giving Circle, presented checks to the grant recipients.

"Being a member of the Women's Giving Circle is a very unique and humbling experience. To see the power of our collective efforts is very rewarding, and I would encourage all women to join us," said Hawkins. "We are happy to be celebrating our 14th year of giving back, not only to the University of Arkansas, but to projects that impact our entire state. We are especially excited about the new endowed scholarship honoring our founding members. It will make a wonderful difference in the lives of students, just as our founders have made a wonderful difference for the University of Arkansas."

"I was fortunate to receive the largest grant by the WGC this year," reflected Fritsch. "The Women's Giving Circle is an amazing group of philanthropists and people who care about women, children, the University of Arkansas, and the state of Arkansas. For the grant I had to not only apply with justification for the work I proposed in relevance and also on impact on kids, women, and people at large, but once I was selected as a finalist, I had to present a 6 min talk, without slides, without props, without handouts or physical examples. That was the hardest part of the application process for me. I was quite nervous. The WGC was also strict in keeping the presentation to 6 min and to limit questions to 4 min only. I'd never had to give a talk like that before—to explain my science to an audience that was so mixed in backgrounds and interests. I'm used to giving presentations at scientific conferences. It took a lot of thought to transform my research and communicate it effectively. I relied on my deep love of science and excitement in teaching science to young people."

Women's Giving Circle was established in 2002, and its founding members included Sylvia Boyer (B.S.E. 1963), Pat Cooper, Johnelle Hunt, Mary Trimble Maier (B.A. 1949), Julia Peck Mobley (B.S.E. 1965), Harriett Phillips (B.A. 1972), Debbie Walker, Lynne Walton (B.A. 1970), Margaret Whillock (B.S.E. 1957), Mary Lib White and Donna Axum Whitworth (B.A. 1966, M.A. 1969).

Arkansas INBRE Meeting (cont. from page 1)

Right: **Karli Lipinski** received an Honorable Mention for her poster, "Response of GWALP23 Transmembrane Peptides to Incorporation of Charged Arginine Residues." Karli is a student in the Koeppe lab.

Below: Tia'Asia James from UA Pine Bluff presenting her research in the Oral competition for Chemistry. She was awarded 1st place.



Featured speaker Dr. Steven Harms with Amanda Paz Herrera, University of the Ozarks, who did her 2016 REU with Dr. Denise Greathouse. Amanda placed second in the Chemistry Oral Competition.

Marvin Fawley, Donnell White, and Martin Taylor from UA Monticello enjoy breakfast al fresco. Donnell received an Honorable Mention for his poster "Characterizing the Maintenance Role of MLL1 in Human Acute Myeloid Leukemia."



Above: Doug Rhoads has poster judging down to a science.

Left: Dr. Edmond Wilson (far right) with several of the students from Harding University.



Arkansas INBRE is funded by a grant from the National Institute of General Medical Sciences, which is under the Institutional Development Award (IDeA) Program of the National Institutes of Health. The IDeA program was founded for the purpose of expanding the geographic distribution for NIH funding and student participation in biomedical and behavioral research.

Dr. Roger Koeppe Receives Distinguished Faculty Award

October 27, 2016 News Headline



The University of Arkansas Honors College honored six faculty members who have set the bar especially high for teaching and leadership at the annual Honors College Faculty Reception.

Honors faculty members go the extra mile for honors students. In addition to teaching honors courses, sections and special colloquia, these professors put in hours of work behind the scenes, mentoring honors students one-on-one, interviewing nervous fellowship applicants and writing countless letters of recommendation.

"These six faculty members have touched students' lives and enriched the honors experience here on campus," said Lynda Coon, dean of the Honors College. "We deeply appreciate their dedication and look forward to recognizing their efforts at the reception next week." Dean Coon will present a bronze medallion to this year's Distinguished Faculty Award and Distinguished Leadership Award recipients, who will be introduced by the deans of their respective colleges. Each winner also will receive \$1,000 in academic funding.

The 2016 recipients of the Honors College Distinguished Faculty Award are: Kimberly Frazier, Assoc. Prof of Communication disorders, Carl Smith, assoc. prof of landscape architecture, Nick Anthony, professor of poultry science, Carol Gattis, assoc. dean

emeritus, Honors College, John Norwood, professor in WCOB, and **Roger Koeppe**, distinguished professor of chemistry and biochemistry, J. William Fulbright College of Arts and Sciences. Koeppe's research focuses on membrane biophysics with a special emphasis on protein engineering and protein/lipid interactions. He has mentored more than 35 honors students during his 37 years at the University of Arkansas.

His research mentorship has proved to be especially fruitful for his students: four of them have won National Science Foundation Pre-Doctoral Fellowships, seven have been selected for the Goldwater Scholarship, and seven have published papers with Koeppe. Most recently, Bodenhamer Fellow Armin Mortazavi coauthored a paper that was featured on the cover of ChemBioChem (March 2016); he was the first of Koeppe's students to publish research while still an undergraduate. Jordana Thibado (B.S. in chemistry, magna cum laude, 2016) currently has a manuscript under review at Biochemistry, a journal published by the American Chemical Society.

Koeppe has served as honors advisor for the Department of Chemistry and Biochemistry for the past 12 years. He has previously been recognized with an Alumni Association Faculty Distinguished Achievement Award for Research in 1992 and the Fulbright College Master Researcher Award in 2000. Koeppe was a Fulbright America Scholar to The Netherlands in 1992.



Three Minute Thesis Competition

In preparation for the preliminary heats of the campus-wide Three Minute Thesis Competition November 14-18, the department of chemistry and biochemistry held its own competition in October. All graduate students were encouraged to participate. The academic contest challenges students to summarize their thesis or dissertation research within three minutes to a general audience. Presenters are judged on their ability to help audience members comprehend their research and their ability to engage the audience. In addition to the three minute time limit, they may use one static PowerPoint slide. First and second place winners from the five divisions within the department were: Physical - **Dustin Baucom** and **Cameron Crane**. Analytical - **Mahsa Lotfi-Marchoubeh** and **Jazlynn Sikes**. Biochemistry - **Sowmya Sivakumar** and **Julie Eberle**. Inorganic/Materials - **James Lowe** and **Joshua Lochala**. Organic - **Elvis Boateng** and **Lucas Whisenhunt**. Mahsa Lotfi-Marchoubeh received 1st place for the entire department, and Jazlynn Sikes received 2nd place for the department. First and second place in each division received monetary prizes and the overall first and second for the department got additional prizes.

Mahsa Lotfi-Marchoubeh and Sowmya Sivakumar both received Second Place recognition at the campus-wide semi-finals competition Nov. 14-18 for Chemistry and Cell and Molecular Biology. The finals will be February 6, 2017.

The Three Minute Thesis competition is sponsored by the Graduate School and International Education and was founded by the University of Queensland in 2008.



Honors and Awards (cont. from p. 2)

Jingyi Chen was promoted to Associate Professor with tenure. Her research interests include synthesis, characterization, and surface modification of Nanostructured functional nanomaterials for energy conversion, tribology, and biomedical applications.

Joshua Sakon was promoted to Professor. His research interests center around promoting bone and skin growth and repair. His lab uses the X-ray diffraction method to explore the events in medically important biochemistry at an atomic level, with the ultimate goal of bringing drugs/devices from bench to bedside.

Roger Koeppe received the Distinguished Faculty Award from the Honors College.

Jie Xiao has been voted to be member-at-large of the battery division of The Electrochemical Society.

Ingrid Fritsch received the Faculty Distinguished Achievement Award for Research from the Arkansas Alumni Association at their 72nd Annual Celebration October 14, 2016. (pictures on page 8)

The Women's Giving Circle awarded **Ingrid Fritsch** \$25,000 for her submitted proposal.

Kz Shein, Jennifer Gidden, and Heidi Thompson received their 10 year service award at a banquet at the Fayetteville Town Center in early October.

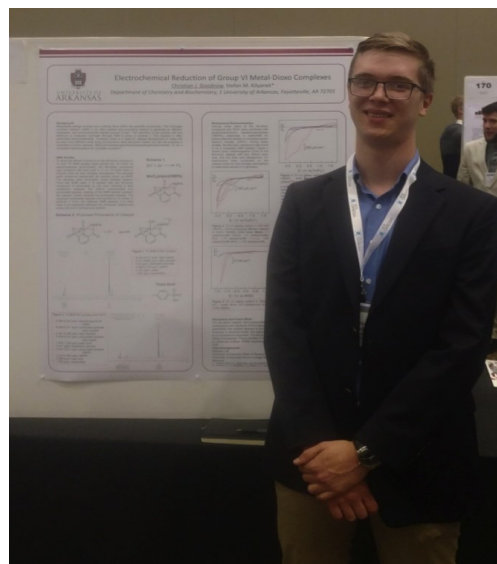
Pictured is Kz Shein



Mahmoud Moradi has been awarded a computer resource allocation on Antron 2, a special-purpose supercomputer for molecular dynamics (MD) simulations housed at the Pittsburgh Supercomputing Center (PSC). The Moradi Lab is among 52 research labs across the U.S. who have been awarded access to Anton 2 machine with allocations ranging from 50,000 to 460,000 molecular dynamics units (MDUs). An allocation of 460,000 MDUs of compute time has been awarded to Moradi Lab to be used for Atomic-Level Characterization of Energetically Downhill Conformational Transition of a Bacterial Multidrug Transporter.

ACS MWRM

Ingrid Fritsch and Jonathan Moldenhauer at the ACS MWRM.

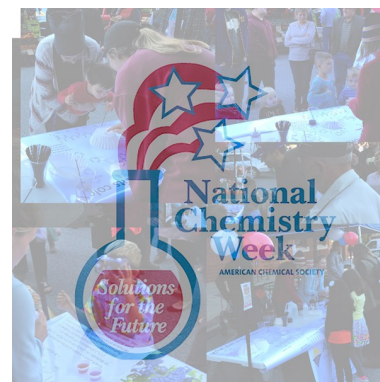


Poster presentation by Christian Goodnow at the ACS MWRM.

National Chemistry Week

~ at the Fayetteville Farmers Market!

Members of the local section of the American Chemical Society and the ACS student affiliate chapter treated families at the farmers market October 22, 2016 to a tiny taste of science! The theme for 2016 was "solving mysteries through chemistry." Children and adults of all ages used experiments to explore the components of everyday chemicals such as natural and artificial food colorants. **Stefan Kilyanek** and **Margaret Hershberger**, along with student volunteers **Christian Goodnow**, **Abby Terlouw**, **Madeline Meier**, **Heather Becker**, **Emily Petersen**, **Willie Evans**, and **Mary Malloy** made learning science fun!

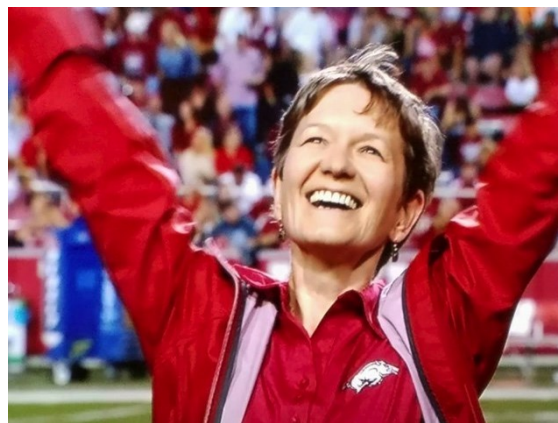


2016 Distinguished Faculty Award in Research

The Alumni Association's 2016 Distinguished Faculty Award in Research was awarded to Professor **Ingrid Fritsch**. This recognition included many activities, including attending a University of Arkansas Alumni Association dinner and celebration, enjoying a Hogwild Tailgate Party with the research group and friends at the Alumni House, and walking onto the football field at halftime during the Homecoming football game.



Chancellor Joseph E. Steinmetz officially recognized Ingrid Fritsch with the award at the Alumni Association dinner on Oct. 14.



Awardees were paraded onto the football field at half time at the Arkansas Homecoming game against Ole Miss on Oct. 15.



The Hogwild Tailgate party (Oct. 14) with research group and friends: (front) Ben Jones, (left to right, back) Miguel Abrego, Aaron Nicholson, Jazlynn Sikes, Ingrid Fritsch, Susanne Striegler, Mahsa Lotfi-Marchoubeh, Veronika Haehnel, Foyisal Khan, Fahmida (Jenny) Afrose. (Leanne Mathurin took the photo).

Four Students Receive the American Chemical Society Undergraduate Award in Analytical Chemistry

Four students at the University of Arkansas received the 2016 Undergraduate Award in Analytical Chemistry, sponsored by the Analytical Chemistry Division of the American Chemical Society. They are **Madeline C. Meier**, **Clarissa A. Long**, **Gray M. Orman**, and **Keaton L. Bench** (left to right in the photo). The award includes



a certificate, a medallion, and a subscription to the scientific journal Analytical Chemistry. Faculty in the division of Analytical Chemistry in the Department of Chemistry and Biochemistry identified awardees based on academic excellence and laboratory performance in analytical chemistry. The students must be at least one year away from graduating with a B.S. degree.



Adams Receives Honors College Grant ~ Nov. 21, 2016 Newswire

The Honors College has awarded almost \$80,000 in grants to faculty across campus to promote undergraduate research and honors student researchers working in a broad range of disciplines, from animal science to anthropology and biomedical engineering. Grant monies will be used to purchase materials ranging from three-dimensional imaging technology to a virtual anthropology workstation that will allow student researchers to analyze skeletal shapes.

"In large part due to the stellar mentorship of honors professors, our undergraduate researchers are already getting published in top journals," said Jennie Popp, associate dean of the Honors College. "I'm excited to see these grants give students and faculty even better access to the equipment they need to make a transformational difference."

The Faculty Equipment and Technology Grants are funded by a portion of the \$300 million gift made by the Walton Family Charitable Support Foundation in 2002. The grants are designed to help clinical, tenured, and tenure-track faculty purchase specialized equipment or technology to support, advance, and promote undergraduate research and honors student researchers at the University of Arkansas.

One of the 14 Faculty members who received awards was **Paul Adams**. Adams is an associate professor in biochemistry. His research will narrow the gap in the knowledge of molecular details of Ras protein, among the first human cancer-causing proteins to be identified.

Magnetizing a Collaboration Across the Atlantic

Professor **Ingrid Fritsch**'s laboratory hosted two collaborators in October from the Leibniz Institute for Solid State and Materials Research of Dresden, Germany (IFW Dresden). Dr. Margitta Uhlemann and postdoctoral associate Dr. Veronika Haehnel worked with Fritsch group members in developing a method for measuring effects of magnetic field gradients on particle motion and microfluidics. The Fritsch group's expertise in microfabricated magnetoelectrochemical fluidic devices was combined with Dr. Uhlemann's long track record in investigations of magnetic field influences on chemical systems and Dr. Haehnel's expertise in patterning magnets and directing magnetic fields on a small scale. The researchers hope to attain not only a stronger understanding in fundamental science as it pertains to magnetic field-influenced fluid motion, but also with the intent to eventually incorporate this approach for lab on a chip applications. Drs. Uhlemann and Haehnel also gave research seminars in the Chemistry and Biochemistry Department: Dr. Haehnel on "Electrodeposition of Fe-Based Magnetic Alloys for Thin Films and Template Based Nanostructures", and Dr. Uhlemann on "Structured deposition in magnetic gradient fields". Our visitors also enjoyed an excursion to Devil's Den.



Dr. Margitta Uhlemann (IFW Dresden) at Devil's Den, AR



Dr. Veronika Haehnel (IFW Dresden) at Devil's Den, AR

Students Defending

Sarah Phillips defended her dissertation "Direct Attachment of 4-Hydroxybenzoic Acid Polymers and Capture Agents to Flat Sheet and Microdialysis Membranes for Improved Mass Transport" November 8, 2016. Her research mentor is Julie Stenken. Sarah earned her BS and MS degrees from Missouri State University in 2009 and 2011, respectively, and entered our program in the fall of 2011.



Venkatesan Rajagopalan defended his Cell and Molecular Biology dissertation "Influence of pH and Acidic Side Chain Charges on the Behavior of Designed Model Peptides in Lipid Bilayer Membranes" November 29, 2016. His research mentor is Roger Koeppel. Venkatesan received his B.Sc. from the University of Mumbai in 2008, and his M.Tech. degree from Padmashree Dr. D.Y. Patel Univ. in 2008. He entered our program in the fall of 2011.



Pooja Bajwa will defend her dissertation "Role of the Inner Shell Architecture on the Various Blinking States and Decay Dynamics of Core-Shell and Core-Multishell Quantum Dots" December 2, 2016. Her research mentor is Colin Heyes. Pooja earned her B.Sc. in 2001 from Guru Nanak Dev. University in India, her M.Sc. from the same institution in 2003, and her B. of Education in 2005 from the University of Jammu in India. She entered our program in the fall of 2010.



New Arrival

Helena Alice Kilyanek was born August 27, 2016 at 7:34 p.m. She weighed 8 lbs., 4 oz. She is getting a head start on the periodic table. Proud parents are **Stefan and Margaret Hershberger Kilyanek**.



Happenings in the P Chem Lab

What happens when you're faced with a long night of studying and a random roll of plastic wrap? Kai Leong found out the hard way. Not only was his car neatly packaged in Harmon Garage, he found his desk and all contents upon it neatly wrapped also. The guilty lab rats are pictured below. Their faces have been masked to protect their identities. Any likeness to actual, current, chemistry graduate students is completely coincidental.



Help Me !!!
C=C C1=CC=CC=C1
 I'M DIENE !!!
CHEMFEAKS

Alpha Chi Sigma Homecoming Competition

For Homecoming this year, the UARK Student Alumni Association hosted a registered student organization tiered competition with different events that groups could participate and compete in for points. The three tiers were Anthracite for groups with up to 40 members, White for groups with 40-100 members, and Cardinal for groups with more than 100 members. The Alpha Sigma Chapter of Alpha Chi Sigma competed in four



Parade: (left to right) Marissa Reynolds (MA), Hunter Jones, Jordan Earp, Jessica Paschal (PR and Homecoming Chair), John Moore (Treasurer), Edna Martinez, Justin Reed (pledge), Dustin Baucom

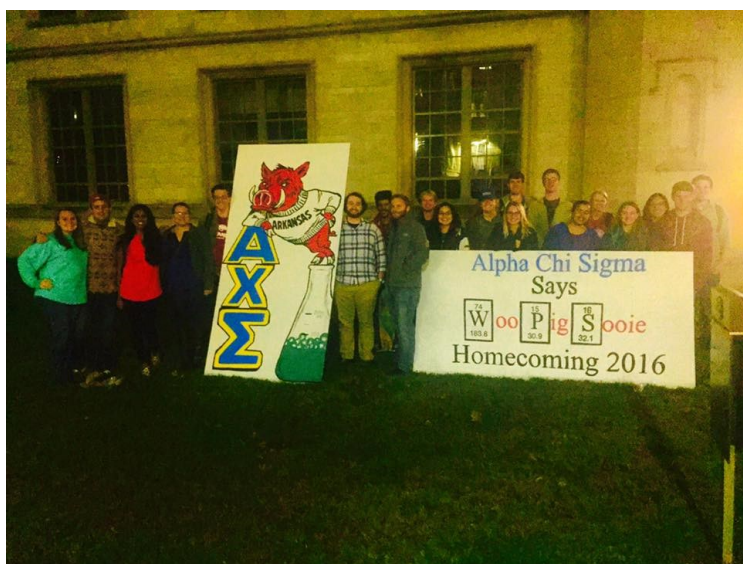
events for the White tier: Lawn Decorations, Food Drive, Parade, and Pep Rally. The winner of each tier was announced and presented a trophy on the Frank Broyles Field of the Donald W. Reynolds Stadium at halftime of the Homecoming football game in front of almost 70,000 fans. Master Alchemist

Marissa Reynolds and Public Relations Chair Jessica Paschal represented the Chapter in acceptance of the First Place White Tier trophy which will be proudly shown in their display case in the Chemistry building on campus later this semester.



Pep Rally: FRONT ROW Justin Rodgers, Hunter Jones, Jessica Paschal (PR and Homecoming Chair) BACK ROW Jordan Earp, Edna Martinez, Dustin Baucom, Justin Reed (pledge), Marissa Reynolds (MA)

Submitted by Master Alchemist Marissa Reynolds



Lawn Decorations: (left to right) Marissa Reynolds (MA), Hunter Jones, Sowmya Sivakumar (pledge), Colette Robinson (Gateway District committee, Beta Rho), Justin Reed (pledge), Zebulon Schichtl (Recorder), John Moore (Treasurer), Dustin Baucom, Chase Timmons (Science Outreach Chair), Karime Bolivar, Emily Petersen, Jessica Paschal (PR and Homecoming Chair), Matt Calhoun, Christian Goodnow (MC), Alda Diaz-Perez, Madeline Meier (Budget Chair), Leanne Mathurin (Pro), Alix Montoya-Beltran (pledge), Jordan Earp, Harper Grimsley (Parliamentarian)



Trophy: Jessica Paschal (PR and Homecoming Chair) and Marissa Reynolds (MA)

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Fulbright.uark.edu/departments/chemistry/ &
Department of Chemistry and
Biochemistry *University of
Arkansas

Safety Tip:

By Bill Durham

Understand the basis for these tips! Pouring acid into water is a simple idea and a common safety tip. Unfortunately, "slowly with lots of stirring" is often assumed and left out. The basic idea is to mix the acid with water in such a way as to not generate a local hot spot in the solution. The order of mixing is irrelevant if you pour equal volumes of acid and water together rapidly with no stirring. The outcome is always the same - a serious accident.



Department of Chemistry
and Biochemistry

Excellence in the Central Science

Calendar of Events

December

- 5 Seminar: Dr. Boryann Liaw, Idaho National Laboratory, 3:30 CHEM 144. *Is There a Viable Pathway Toward Battery Durability, Reliability and Safety?*
- 9 Final copies of thesis/dissertations must be submitted to the Graduate School
Dead Day (Departmental potluck)
- 12-16 FINALS WEEK
- 17 Commencement
- 21 Winter begins
- 23-31 Campus is Closed

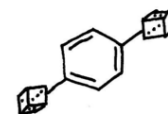
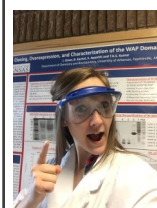
January

- 1 New Year's Day
- 2 Campus is Closed
- 3 Staff Returns to work
- 16 MLK Holiday
- 17 Classes begin
- 20 Inauguration Day
- 28 Chinese New Year

Our departmental web page is located at Fulbright.uark.edu/departments/chemistry/. There you will find links to departmental information, news, and people. But best of all, alumni can stay in touch through the Alumni & Friends link. We want our alumni to stay in touch! Please take a few minutes to browse the page and submit any update you'd like published (or not). We welcome pictures too!

Joke Time - with Julie

Paradise.



The department of chemistry and biochemistry at the University of Arkansas strives for excellence in research, teaching and service in chemistry - the central science. We aspire to positions of leadership regarding the discovery of new scientific knowledge, the training of students, and the economic development of the State of Arkansas. We seek to recruit and retain a diverse group of the best faculty, students and staff to address the challenges of the future through interdisciplinary and multi-disciplinary research and education.

Library Hours

Fall Hours: August 21 - December 17

Saturday and Sunday	CLOSED
Monday - Thursday	8:00 am - 9:00 pm
Friday	8:00 am - 6:00 pm
Friday, December 16	8:00 am - 5:00 pm

Spring Hours: January 3 - May 26

Saturday and Sunday	CLOSED
Monday - Thursday	8:00 am - 9:00 pm
Friday	8:00 am - 6:00 pm

Exceptions to Hours

Friday, March 17	8:00 am - 5:00 pm
Monday - Thursday, 3/20-3/23	8:00 am - 5:00 pm
Friday, March 24	CLOSED
Friday, May 12	8:00 am - 5:00 pm
Monday - Friday, 5/15-5/26	8:00 am - 5:00 pm

The chemistry and biochemistry library resources can be accessed in the following LibGuides: <http://uark.libguides.com/content.php?pid=110953>. Please bookmark for future use.

Theses and dissertation resources can be found on the following LibGuide: <http://uark.libguides.com/content.php?pid=123035&sid=1057466>.

For more information: Check the Libraries' web site (<http://libinfo.uark.edu>) for updated information on hours and services. Library hours are also available by dialing 479-575-2557.

CHBC Library (CHEM 225)
<http://libinfo.uark.edu/chemistry>

